AMENDMENTS

In the Specification

Please amend the Specification as follows:

Page 1, line 3, ~~FIELD OF INVENTION~~ to BACKGROUND OF THE INVENTION

Please replace paragraph [001] with the following amended paragraph:

[0001] This invention in general relates to navigation technology. Further this invention pertains to a ~~global positioning system~~ Global Positioning System (GPS). More particularly this invention relates to a Global Positioning System receiver.

Page 1, line 8, delete the word BackGround.

Please replace paragraph [0002] with the following amended paragraph:

[0002] Global Positioning System receivers are primarily used for navigation purposes. The system generates a position fix by way of outputs, position, speed and other vital navigation information. The receiver ~~needs~~is equipped with an antenna and ~~with~~ a hardware unit. The ~~H~~hardware unit comprises ~~of~~a ~~R~~radio ~~f~~frequency (RF) down converter, ~~C~~correlator and a ~~N~~navigation processor. The receiver ~~gets~~receives satellite signals from the antenna, down converts the signal in the RF down converter and processes the signal in the c~~C~~orrelator. The measurement and correlation values from the ~~C~~correlator are transmitted to a navigation processor, ~~(~~for example a Digital Signal Processor or ~~any other~~ micro controller~~)~~ for further processing. The ~~P~~position and other navigation informations is ~~are~~ computed in the navigation processor and transmitted in a standard format which can be used by the system integrators to develop various applications around these Global Positioning System receivers like ~~F~~fleet ~~M~~management ~~S~~system, and ~~T~~traffic telematics.

Please replace paragraph [0003] with the following amended paragraph:

~~BACKGROUND ART~~

[0003] This invention is directed to an improved 12 channel ~~channel~~ and single

frequency coarse acquisition (C/A) code Global Positioning System receiver. By virtue of the invention, the receiver core is realized around a single programmable fixed-point Digital Signal Processor (DSP) microcomputer. The receiver is based on a unique Soft-Correlator architecture, which allows the complete Global Positioning System signal processing as well as navigation processing functions to be implemented on a single programmable fixed point DSP. This flexible implementation lends itself ~~naturally~~ for interfacing with any standard RF front end. The receiver has all the advantages associated with a software requirement, such as scalability, and upgradability. The low cost, high performance DSP microcomputer totally eliminates the necessity of a micro controller, usually required by conventional receiver architectures. The solution includes a Programmatic Interface to the Global Positioning System receiver ~~C~~core, which facilitates the original equipment manufacturers (OEMs) to embed their own applications on the receiver core along with the Global Positioning System function.

Please replace paragraph [0004] with the following amended paragraph:

[0004] The primary object of invention is to develop a complete Global Positioning System receiver core using a single programmable DSP. Using a single programmable DSP was driven by the need to effectively address demands of the emerging applications in the fields of personal navigation, automatic vehicle location (AVL) and traffic telematics. Every new application conceived in these fields invariably involves the integration of Global Positioning System sensor technology with one or more of the technologies from ~~among~~ cellular telephony, hands free telephony, data modems, speech recognition, speech synthesis, audio/video compression, internet access etc. The Global Positioning System receiver according to the invention has been designed to make seamless integration of multiple technologies feasible without any compromise in performance levels and without the need for customizing silicon.

Please replace paragraph [0006] with the following amended paragraph:

[0006] ~~It is to be noted that the main design is built around a hardware correlator.~~ The conventional correlator is used to acquire and track ~~the~~ satellite signals. The correlator resides in an Application Specific Integrated Circuit, which is a hardware chip that is customized to the needs of the correlator.

Please replace paragraph [0008] with the following amended paragraph:

[0008] The conventional Global Positioning System receiver uses a specific Radio ~~f~~Frequency down converter for a specific correlator.

Please replace paragraph [0009] with the following amended paragraph:

[0009] The correlator in the conventional Global Positioning System receivers, based on the Application Specific Integrated Circuit has several drawbacks which are listed below:

- It requires the usage of 4 hardware units. This makes the Global Positioning System receiver a costly device. The device also consumes a lot of power.
- As the complexity of the correlator increases, the cost of the Application Specific Integrated Circuit also increases. Hence the resultant increase in the cost of the Global Positioning System receiver as well as the power consumption.
- The performance of the receiver depends mainly on the correlator. Since the correlator resides in an Application Specific Integrated Circuit, which is a ~~customised~~ customized hardware chip, it is very difficult to implement new signal processing algorithms in the correlator. This feature makes the conventional Global Positioning System receiver inflexible.
- The correlator is in hardware and if the RF down converter is changed, it is very difficult to change the correlator. This makes the interface of the correlator with 'all' types of RF down converters difficult and contributes to the inflexibility of the system.

Please replace paragraph [0010] with the following amended paragraph:

~~BRIEF~~ SUMMARY OF THE INVENTION

[0010] In the novel Global Positioning System receiver, the correlator is incorporated within the navigation processing unit which resides in a programmable Digital Signal Processor (DSP) chip. The invention thereby eliminates the need of a hardware correlator, and facilitates ~~making it easy to~~ the ~~implemention~~ implementation of new signal processing algorithms. Also, the correlator design can be easily changed in the software to interface with any type of RF down converter. This makes the system

very flexible. As there is no hardware correlator, the cost as well as the power consumption of the Global Positioning System receiver is reduced considerably.

Please replace paragraph [0011] with the following amended paragraph:

[0011] Salient Features Of The Invention:

- In accordance with the novel Global Positioning System receiver, the programmable DSP processor is incorporated to ~~realise~~ realize the correlator ~~function and Nnavigation processor functions,~~ thereby eliminating the usage of the hardware correlator.
- In the novel Global Positioning System receiver, a sampling clock (SCLK) is directly connected from DSP to the RF down converter, making it possible to change the sampling frequency in the software to interface with any type of RF down converter.

Please replace paragraph [0013] with the following amended paragraph:

[0013] In order to have complete utilization of the software solution ~~easy,~~ the Global Positioning System receiver according to the invention has been designed to include the following novel features:

(a) flexible software architecture with a programmatic interface

(b) scalable architecture to translate the advances in the DSP core technology into performance benefits

(c) optimized power consumption

(d) dynamic mobilization of computing resources to sustain Global Positioning System sensor performance under adverse signal conditions.

Please replace paragraph [0014] with the following amended paragraph:

[0014] The salient feature of the invention is ~~regarding~~ the incorporation of correlation and navigation functions within the navigation processing unit which resides in a programmable Digital Signal Processor (DSP) chip. It also directly connects to a sampling clock (SCLK) from the DSP to the RF down converter, making it possible to change the sampling frequency in the software to interface with any type of Radio Frequency down converter.

Please replace paragraph [0015] with the following amended paragraph:

[0015] It is the primary object of the invention to ~~invent~~ develop a novel Global Positioning System ~~R~~receiver.

Please replace paragraph [0016] with the following amended paragraph:

[0016] It is another object of the invention to ~~invent~~ develop a novel Global Positioning System ~~R~~receiver which has been designed to make seamless integration of multiple technologies feasible without any compromise in performance levels and without the need for ~~a~~ customized hardware.

Please replace paragraph [0017] with the following amended paragraph:

[0017] It is yet another object of the invention to ~~invent~~ develop a novel Global Positioning System Receiver to realize the correlator ~~function~~ and ~~Navigation~~ navigation ~~processor~~functions, by which the use of a hardware correlator is eliminated.

Please replace paragraph [0018] with the following amended paragraph:

[0018] It is another object of the invention to ~~invent~~ develop a novel Global Positioning System Receiver wherein a navigation processing unit resides in a programmable Digital Signal Processor chip.

Please replace paragraph [0019] with the following amended paragraph:

[0019] It is yet another object of the invention to ~~invent~~ develop a novel Global Positioning System Receiver wherein a sampling clock (SCLK) is directly connected from the DSP to the RF down converter, making it possible to change the sampling frequency in the software to interface with ~~'~~ any ~~'~~ type of RF down converter.

Please replace the following title between paragraphs [0020] and [0021]:

~~DETAILED DESCRIPTION OF PREFERRED EMBODIMENT OF INVENTION~~

BRIEF DESCRIPTION OF THE DRAWINGS

Please replace paragraph [0021] with the following amended paragraph:

[0021] ~~Now the~~The invention ~~will be~~is described in detail with reference to the drawings accompanying the description.

Please replace paragraph [0022] with the following amended paragraph:

[0022] Figure 1 shows the plan view of a Global Positioning System Rreceiver Aarchitecture according to the invention, and

Please replace paragraph [0023] with the following amended paragraph:

[0023] Figure 2 shows the components of a Global Positioning System Rreceiver according to the invention.

Please replace the following titles between paragraphs [0023] and [0024]:

DETAILED DESCRIPTION OF THE INVENTION

ARCHITECTURE Architecture

Please replace paragraph [0024] with the following amended paragraph:

[0024] The Global Positioning System receiver according to the invention is a highly integrated design comprising of two principal blocks shown in (Ffigure 1):

1. RF Down Converter **101**.
2. A programmable digital signal processor **103** for the Global Positioning System, Signal Processor

Please replace paragraph [0025] with the following amended paragraph:

[0025] The Global Positioning System Rreceiver according to the invention uses any standard RF down converter **101**. The front end is typically a two/three stage superheterodyne receiver with an image rejecting front end and a fully integrated Voltage Controlled Oscillator (VCO). For handheld applications with passive antenna configurations, an RF front end with an integrated low noise amplifier (LNA) is preferable, but an external low noise amplifier also can be used if necessary. The RF down converter **101** derives the sampling frequencies from the DSP **103** and the resulting quantized signals are fed to the DSP **103** which does all the signal processing and navigation processing.

Please replace paragraph [0026] with the following amended paragraph:

[0026] The DSP **103** also interfaces with low cost non-volatile memory and Real Time Clock **104** to improve the time to first fix in the presence of primary estimates. The ~~S~~serial communication is established by dedicated serial ports of the DSP **103**, one of which is configured to accept the differential corrections

Please replace paragraph [0027] with the following amended paragraph:

[0027] The Radio frequency down converter ~~converter~~ (**101**) is connected to the ~~Radio Frequency Down converter~~ DSP **103**. A reference Frequency Crystal (**102**) is connected to the Radio Frequency Down converter **101**. A programmable Digital Signal Processor (**103**) is connected to Real Time Clock **104**, Radio Frequency down converter **101**, Serial Electrically Erasable Programmable Read only memory **106**. The system has the Real Time Clock **104** and a battery **105**. The Serial Electrically Erasable Programmable Read Only Memory **106** is connected to the programmable Digital Signal Processor **103**. The system has the Byte Electrically Programmable Read only Memory ~~A RS232 driver~~ **107** connected to the programmable Digital Signal Processor **103** and an RS232 driver **108**.

Please replace paragraph [0028] with the following amended paragraph:

[0028] A correlator **209** interfaces with the hardware. The correlator manager **210** is responsible for giving outputs for Range and Doppler measurements. The Channel Manager **211** (~~ll~~)controls the correlator manager **210**. The Measurement Data processor **212** is used for short listed satellites. The Satellite dData Base manager **213** collects ephemeris and almanac data.. The Host communication **214** interfaces with Hosts such as a personal computer (PC). The User Computation module **215** gets measurements and outputs the position. The Satellite Position Computation Module **216** computes the satellite position required to compute user position. The Satellite Visibility Computation Module **217**generates Visible list required by Channel Manager **211**. Non Volatile Memory Manager **218** interfaces with Non Volatile Memory for storing some important parameters.

Please replace the following title between paragraphs [0028] and [0029]:

DSP ~~MICROCOMPUTER~~icrocomputer

Please replace paragraph [0029] with the following amended paragraph:

[0029] The Global Positioning System Signal Processor is the ADSSTNA V2300, a programmable DSP based on the ADSP218x core, a 16-bit fixed-point microcomputer from Analog Devices Inc .- which is optimized for digital signal processing and high speed numeric processing. At 75 MIPS (million instructions per second) sustained performance and a variable voltage operation from a high of 3.3 volts to a low of 2.5 volts, it is ideally suited for high performance, low power Global Positioning System~~GLOBAL POSITIONING SYSTEM~~ signal acquisition, tracking and navigation processing.

Please replace paragraph [0030] with the following amended paragraph:

[0030] The DSP comes in a 100 pin Thin Quad Flat Pack (TQFP) package and consumes just 1.1875m W/MHz of power internally at 2.5 volts supply voltage, ~~which means~~ delivering 75 powerful DSP MIPS for just 89m W.

Please replace paragraph [0032] with the following amended paragraph:

[0032] Ample number of interrupts and programmable inputs and outputs (I/Os) available on the DSP **103** take care of the various signaling and time-critical tasks and facilitate the realization of a complete receiver core engine complete with the serial I/Os and time outputs with no external glue logic.

Please replace paragraph [0035] with the following amended paragraph:

[0035] The navigation software solution is source code compatible with the future generations of the fixed point family of DSPs from Analog Devices Inc., which means that there is virtually no limit for the possibility of delivering improved Global Positioning System sensor performance at lower cost, size and power.

Please replace the following title between paragraphs [0035] and [0036]:

~~FLEXIBLE SOFTWARE ARCHITECTURE~~ Flexible Software Architecture

Please replace paragraph [0036] with the following amended paragraph:

[0036] One of the salient features of the invention is that the Ssoftware ~~A~~architecture of the Global Positioning System ~~R~~receiver is designed around a few hardware interrupt service tasks, which attend to time critical events, and timer based

periodic and deterministic tasks which are invoked by a ~~S~~scheduler.

Please replace paragraph [0037] with the following amended paragraph:

[0037] It is to be understood that the receiver software has the following types of tasks:

1. Initialization tasks
2. Interrupt tasks
3. Periodically invoked tasks

Please replace paragraph [0038] with the following amended paragraph:

[0038] Initialization tasks are invoked once on power up/reset. These tasks initialize the receiver hardware and software and perform the built in self-test and calibration functions.

Please replace paragraph [0039] with the following amended paragraph:

[0039] Interrupt tasks gain control of the DSP **103** asynchronously, ~~any~~at any point in time after the software is initialized by the ~~I~~initialization tasks. They are activated by hardware events. Periodically invoked tasks are invoked at predefined intervals. The functional decomposition of the navigation system and software is depicted in ~~the figure~~ Figure 2:

Please replace paragraph [0040] with the following amended paragraph:

[0040] The functional components of the software, shown in Figure 2, are grouped under two categories:

1. Signal ~~P~~processing tasks
2. Navigation tasks

Signal ~~P~~processing tasks;

Please replace the following title between paragraphs [0041] and [0042]:

~~PROGRAMMATIC INTERFACE~~ Programmatic Interface

Please replace paragraph [0042] with the following amended paragraph:

[0042] The Global Positioning System receiver ~~under~~ of the invention ~~has~~ uses a unique ~~P~~programmatic ~~I~~interface ~~using which~~ that a system developer can integrate with ~~his/her~~the applications ~~of with~~ the Global Positioning System core library on the same DSP **103**, without having to use another microcontroller.

Please replace paragraph [0043] with the following amended paragraph:

[0043] The interface enables the application developer to:

1. Access the necessary Global Positioning System data structures.
2. Make use of the real time Global Positioning System outputs.
3. Link the application software to the Global Positioning System core engine library.
4. Make maximum use of spare computing assets of the DSP.

Please replace paragraph [0045] with the following amended paragraph:

[0045] The developer can write his/her own code either in gun C (ANSI C compatible from Free Software Foundation) or ADSP218x assembly. ~~He/she~~The developer can access, if necessary, all the real-time Global Positioning System outputs through data structures. The user's object code should be linked with the Global Positioning System core library to generate an ~~the~~ executable program.

Please replace the following title between paragraphs [0045] and [0046]:

~~POWER CONSUMPTION~~ Power Consumption

Please replace paragraph [0047] with the following amended paragraph:

[0047] Under conditions when the receiver continuously tracks all visible satellites and collects data from them, the complete Global Positioning System receiver under the invention reference design consumes about 465 milliwatts(mW).

The solution also includes the following options for saving power:

1. User configurable output rates
2. Only-on-demand generation of outputs
3. Channel autoconfiguration

Please replace the following title between paragraphs [0047] and [0048]:

User Configurable Output Rates:

Please replace paragraph [0048] with the following amended paragraph:

[0048] The Uuser can configure the rate at which navigation outputs are desired from the Global Positioning System sensor. The average power consumption of the entire Global Positioning System reference design at different output rates ~~will be as~~is shown in the table below:

Configured Rate	Power Consumption (average)
1 fix per second	130m W
1 fix per 5 second	75mW
1 fix per 10 second	63mW

Please replace the following title between paragraphs [0048] and [0049]:

Only-On-Demand Generation Of Outputs:

Please replace paragraph [0049] with the following amended paragraph:

[0049] The ~~U~~user can configure the receiver to generate navigation outputs only when on demanded. In this mode, the receiver will be in a low power state by default and will wake up only upon receiving a request from the host for a fix. The receiver will be active for just a fraction of a second to compute all navigation outputs and will revert back to the low power mode.

Please replace the following title between paragraphs [0050] and [0051]:

Channel Auto Configuration:

Please replace paragraph [0051] with the following amended paragraph:

[0051] Channel auto configuration will further reduce power consumption, by including only the barest minimum number of satellites in the navigation solution without compromising ~~on~~ the Dilution of precision (DOP) limits.

All the calculations of power consumption above assume:

1. All the devices operate at 2.7 to 3.3 volts
2. There is a built-in LNA on the RF down converter **101**.
3. No external LNA used on the board
4. Passive antenna configuration
5. 8 satellites are included in the constellation on an average.

Please replace the following title between paragraphs [0051] and [0052]:

~~TTFF (Time to First Fix)~~ Time to First Fix (TTFF):

Please replace paragraph [0052] with the following amended paragraph:

[0052] The TTFF performance of the Global Positioning System receiver under the invention is greatly enhanced by virtue of the powerful DSP instruction set and innovative algorithms. Use of low cost, low ppm (parts per million) crystals do not degrade the TTFF performance. The various TTFF measurements carried out on the Global Positioning System receiver under the invention are as follows:

Time	With at least 4 visible SVs with nominal signal strength	With at least 4 visible SVs with good signal strength
Maximum	78 seconds	54 seconds
Minimum	34 seconds	26 seconds
Average	65 seconds	45 seconds

Please replace the following title between paragraphs [0053] and [0054]:

~~SIZE~~ Size

Please replace paragraph [0054] with the following amended paragraph:

[0054] The reference design of the Global Positioning System receiver under the invention has a small form factor of 51 x 41 x 12 mm. The size can be easily reduced to 41 x 41 x 10 mm for passive antenna configurations.

Please replace the following title between paragraphs [0054] and [0055]:

Original Equipment Manufacturer (OEM) SUPPORT

Please replace paragraph [0055] with the following amended paragraph:

[0055] The navigation solution is backed by a software and hardware support team, which can cater to the customization needs of original equipment manufacturers (OEMs) /application developers. For the convenience of the OEMs' production line, the Global Positioning System receiver ~~under~~ of the invention solution includes the *OEM Firmware Configuration Kit,* which facilitates the generation of executable navigation software binary files with all the desired Electrically Erasable Programmable Read only memory (EEPROM) settings for the configurable parameters such as the Dilution of precision (DOP) limit, almanac, Global Positioning System parameters.

Please replace the following title between paragraphs [0055] and [0056]:

~~EMBEDDED GSM / TRUNKED RADIO INTERFACE~~ Embedded GSM / Trunked Radio Interface

Please replace paragraph [0056] with the following amended paragraph:

[0056] The receiver firmware comes with an optional embedded GSM (Global System for Mobile communications) interface, conforming to the ETS 07.07 and 07.05 specifications. This enables integration of the Global Positioning System receiver under the invention with GSM mobile stations.

Please replace paragraph [0057] with the following amended paragraph:

[0057] Also, the Global Positioning System receiver ~~under~~ of the invention includes ~~as~~ an optional proprietary binary message protocol to interface the Global Positioning System sensor with a modem, to facilitate connection to a VHF /UHF transceiver.

Please replace the following title between paragraphs [0057] and [0058]:

~~DEAD RECKONING (DR) INTERFACE CAPABILITY~~ Dead Reckoning (DR) Interface Capability

Please replace paragraph [0058] with the following amended paragraph:

[0058] The original equipment manufacturers OEMs can implement a hybrid navigation system by including hybrid navigation algorithms on the Global Positioning System core DSP itself, making use of the Programmatic Interface.

Please replace the following title between paragraphs [0054] and [0055]:

Detailed s Description Of The Modules Involved:

Please replace paragraph [0059] with the following amended paragraph:

[0059] The receiver gets the RF signal through an antenna and the signal is passed through at 'RF down converter **101**'. The RF down converter **101** down converts the 1575. 42MHz signal to an intermediate frequency IF. The RF down converter **101** is a triple stage converter with filters to cutoff image frequencies. The IF signal in the RF down converter **101** is converted to a digital signal using an (analog to digital) A/D ~~AID~~ converter ~~in the converter~~.

Please replace paragraph [0060] with the following amended paragraph:

[0060] The digitized IF is ~~taken~~ received by the programmable DSP **103** to ~~do~~ ~~perform~~ baseband processing. The base band processing involves 'correlation' of 12 channels, code and carrier tracking, data demodulation and measurement generation.

Please replace paragraph [0061] with the following amended paragraph:

[0061] The measurements and demodulated data of each channels ~~are~~ is processed to find the user position. As the processing is done in a programmable DSP **103**, the number of channels can be increased based on the availability of MIPs and non volatile ~~Memory~~ memory. The DSP **103** is interfaced to a boot Erasable Programmable Read Only Memory (EPROM) ~~eprom~~ **107** where the code resides. The DSP boots the code into its internal memory during power on.

Please replace paragraph [0062] with the following amended paragraph:

[0062] The RF down converter **101** is interfaced to a good stability frequency crystal **102** which is used as a reference to generate all the local oscillator clocks in the RF down converter **101**. The stability of this frequency crystal **102** ~~some times~~ sometimes determines the performance of the receiver. As the programmable DSP **103** is used a low cost crystal can be used with minimum impact on the performance of the Global Positioning System receiver.

Please replace paragraph [0063] with the following amended paragraph:

[0063] A Real Time Cock (RTC) **104** is provided to keep track of the time to speed-up the acquisition time during certain conditions. An Electrically Erasable Programmable Read Only Memory (EEPROM) **106** is also provided for the same purpose. The almanac, ephemeris information along with the approximate time and position is used to speed up the acquisition time. Now the invention addresses the utility of the system to various applications.

Please replace paragraph [0064] with the following amended paragraph:

[0064] Various tasks include the following:

1. Correlator **209** which acquires and tracks signals from up to 12 satellites simultaneously, given the Correlation values as output every millisecond.
2. Correlator Manager **210** which controls and monitors the channel of the Correlator **209**, carries out ~~R~~range and Doppler measurements and extracts navigation message.
3. Satellite Database Manager **213**~~which~~ maintains the database of navigation messages in the receiver.
4. Channel Manager **211**~~which~~ assigns appropriate satellites to all the channels of the ~~C~~correlator **209** for acquisition.
5. Measurement Data Processor **212**~~,~~ which filters the ~~P~~pseudorange and Doppler measurements for all tracking satellites and validates the measurement data for use in the navigation solution.

Please replace the following title between paragraphs [0064] and [0065]:

Navigation Tasks:

Please replace paragraph [0065] with the following amended paragraph:

[0065] These tasks are executed in response to less frequent but periodic events and some of these are floating point computation intensive. These include:

1. User Position Estimation Module **215** which estimates the accurate position, velocity and time.
2. Satellite Visibility Computation and Satellite Selection Module **217** which computes the list of visible satellites based on the estimates available
3. Satellite Position Computation Module **216**~~which~~ computes the precise position and velocity of the satellites for use in the navigation solution.
4. Host Communications Module **214** ~~which c~~communicates with the host through the RS232 link
5. Non Volatile Memory Module **218** which manages the data in the Electrically Erasable Programmable Read only memory (EEPROM) and Real Time Clock (RTC).

Please replace paragraph [0066] with the following amended paragraph:

[0066] The powerful floating-point library available on the DSP core enables very efficient execution of the floating-point intensive tasks. However, the architecture of the Global Positioning System receiver ~~under~~ of the invention makes it feasible for the OEMs to migrate the Navigation tasks to a separate microcontroller while still maintaining a seamless interface with the signal processing tasks residing on the ADSSTNAV2300, if their overall system design considerations necessitate such a partitioning.

Please replace paragraph [0067] with the following amended paragraph:

[0067] Theis invention ~~can~~may find ~~its~~an application in car telematics unit, orbit determination of satellites, fleet management applications, etc. But the main advantage of the invention lies in its programmability.

Please replace paragraph [0068] with the following amended paragraph:

[0068] For example consider a car telematics unit. The vital components for such a car telematics unit consists of a Global Positioning System receiver, GSM phone, Audio synthesis ~~sysnthesis~~, voice recognition system, etc. The system integration of these components involves enaormous cost and time. If each of these components are available as software modules which can be run on a single processor, the hardware cost and complexity can be reduced drastically. The programmatic Global Positioning System ~~such~~described ~~as~~in theis invention help in this direction.

Please replace paragraph [0069] with the following amended paragraph:

[0069] As the invention runs on a processor without any base band hardware, any new enhancements to the signal processing chain can be easily incorporated. Therefore, customization of the ~~product~~ end user application is much easier when the ~~system namely~~ Global Positioning Receiver is used.

Please replace paragraph [0070] with the following amended paragraph:

[0070] It is to be noted that the object of the description is to explain salient features of the invention. It is to be further noted that the description ~~is~~ in no way restricts the scope and ambit of the invention. It is evident that within the scope of the invention various amendments and modifications are permissible. The scope of the invention is defined in the following statement of claims.